DU3

TRENDS OF HYPNOTIC MEDICATION USE IN A 2000-BED MEDICAL CENTER IN TAIWAN

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OBJECTIVES: Although the evidence showed the risks of using sedative benzodiazepine (BZD) and long-terms use of non-BZD hypnotics (i.e., Z-drugs) among the elderly, it is still unavoidable to use these medications for the elderly to solve their insomnia problems. This study aimed to describe the utilization of hypnotic medications for outpatients in a 2000-bed medication center in Taiwan. **METHODS:** We conducted a secondary data analysis using China Medical University Hospital (CMUH) in-house databases. From 2007 to 2013, those outpatients ever prescribed with, estazolam, lorazepam, diazepam, alprazolam, zolpidem and zopiclone were of interest. The prescription prevalence rates of these drugs, its average number of defined daily dose (DDD), prescriber specialties and demographic characteristics of patients were examined using descriptive analyses. **RESULTS:** Those elder patients were prescribed with 133 ±158 DDD of Z-drugs in CMUH in 2007. 7.6% of them used Z-drugs exceed 365DDD within one year. In 2009, more than 40% of all 15,815 prescriptions with BZD and Z-drug hypnotics were prescribed for patients aged 65 year or more. Of them, 44% of alprazolam, 51.1% of diazepam, 46% of estazolam, 41% of zolpidem, and 46% of zopiclone were prescribed for the elderly patients, respectively. In 2011, 40% of zolpidem users and 32% of zopiclone users were elderly. The top three prescribing specialists for Z-drugs were neurologist, cardiologist and psychiatrists in (accounted for 63.01% and 46.96% for zolpidem and zolpiclone, respectively). Of 12,982 patients being prescribed with 53,330 BZD and Z-drug prescriptions in 2013, 76.9% were aged 65 year or more. The Z-drugs were still more common than BZD as a whole. **CONCLUSIONS:** While the elderly accounted for small proportion of medical care users, relatively larger proportions were prescribed with BZD and Z-drug hypnotics to manage their insomnia problems in CMUH across seven years. Further outcome assessments for such usage are necessary.

DU4

STATIN MEDICATION USE AND THE DEVELOPMENT OF PROLIFERATIVE DIABETIC RETINOPATHY AMONG PATIENTS WITH TYPE 2 DIABETES, HYPERTENSION, AND HYPERLIPIDEMIA

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The progression from Non-Proliferative Diabetic Retinopathy (NPDR) to Proliferative Diabetic Retinopathy (PDR) is associated with a decline in best-corrected visual acuity and related health care utilization. Few studies have systematically assessed the effect of pharmacological regimens in delaying the progression of PDR. Many patients are also on chronic medication regimens which may also have temporal effects on the risk of disease progression.**OBJECTIVES:** Examine how patients' chronic medication utilization potentially influences their PDR progression among NPDR patients with type-2 diabetes, hypertension and hyperlipidemia in the United States. **METHODS:** This retrospective cohort study was conducted using a claims database of all beneficiaries had any ophthalmic care and were enrolled in a large managed-care network from 2001 to 2012. Utilization of distinct oral hypoglycemic agents, blood pressure lowering agents and lipid lowering agents were measured by the total cumulative dosage of medication (g) within a three year moving window. A multivariate Cox regression analysis with medication use as a time-varying covariate assessed the association between medication use and progression to PDR. **RESULTS:** A total of 10,845 NPDR patients with all of these three conditions were eligible for this study, and 837(7.72%) of them developed PDR during the follow up period. Increased use of Statins was associated with a significant decreased hazard of developing PDR (Hazard Ratio: 0.995 95%CI [0.99–0.999], $p<0.05$) after adjusting for demographic and clinical confounders. Patients with increased use of insulin had increased hazard of developing PDR (Hazard Ratio: 1.002 95%CI [1.001-1.004], $p<0.01$). Potential risk factors of PDR progression included HbA1c level and diabetes-related complications. **CONCLUSIONS:** By developing a time-dependent medication use model, our study provides important information on physicians' prescribing strategies aimed at preventing PDR progression among patients with type-2 diabetes, hypertension and hyperlipidemia. Increasing adherence to statins for patients diagnosed with all of these three components of metabolic syndrome may be helpful for delaying their PDR progression.

HEALTH SERVICES RESEARCH STUDIES

HS1

CLINICAL OUTCOMES ASSOCIATED WITH THE USE OF GUIDELINE RECOMMENDED CARE IN PATIENTS POST DISCHARGE FROM CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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OBJECTIVES: To evaluate the impact of the use of guideline recommended care on the risk of subsequent moderate to severe COPD exacerbation requiring hospitalization or emergency department (ED) visit following discharge from COPD in a privately insured population in Texas. **METHODS:** Retrospective population-based cohort study design using Blue Cross Blue Shield of Texas (BCBSTX) enrollment and claims data (years 2008 to 2011) was employed. All COPD-related hospitalizations and ED visits were extracted. Patients were identified as adherence to guideline recommended care if within 30 days of discharge, had at least one claim of prescription fills for any maintenance medications and had at least one follow up visit with a primary care physician or pulmonologist. The presence of a subsequent COPD-related exacerbation requiring hospitalization or an ED visit was assessed for one year post-discharge and compared between cohorts who receive and did not receive guideline recommended care using a probit regression model with instrumental variables. **RESULTS:** One-fourth (29%) of the patients with COPD-related hospitalizations/ED visits were identified as recipients of the guideline recommended care. Receiving guideline recommended care was associated with a reduction of 4.4 percentage points in the probability of having subsequent COPD exacerbation requiring hospital admission/ED visits (p-value = 0.837). Analysis focusing on the follow up visit alone shows that having follow up visits were significantly associated (p-value = 0.018) with a reduction in the probability (32.8 percentage points) of having subsequent COPD exacerbation requiring hospital admission/ED visits, while the use of maintenance medication was associated with an increase in the probability (19.5 percentage points) of having subsequent COPD exacerbation requiring hospital admission/ED visits (p-value = 0.337). **CONCLUSIONS:** The use of guideline recommended care, especially in the use of follow up care, was significantly associated with the reduction in the probability of having subsequent COPD exacerbation requiring hospital admission/ED.

HS2

MEDICATION ADHERENCE AS A VALUE MESSAGE: A RARITY IN EVALUATION ASSESSMENTS SUBMITTED TO MAJOR HTA BODIES

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OBJECTIVES: Poor or non-adherence causes medical and psychosocial complications for patients and represents a considerable financial burden for health care systems worldwide. Medication adherence problems have not been routinely highly valued by health technology assessment (HTA) bodies in their evaluation assessments. In this study we assess the extent to which leading HTA bodies consider the value of medication adherence in their reimbursement decision making. **METHODS:** Evaluation of published assessments made from 2010 to 2013 in five leading HTA bodies (Canadian Agency for Drugs and Technologies in Health (CADTH), the French National Authority for Health (HAS), England's National Institute of Health and Care Excellence (NICE), the Australian Pharmaceutical Benefits Advisory Committee (PBAC) and the Scottish Medicines Consortium (SMC)) were reviewed for asthma, hypertension, diabetes, multiple sclerosis, psychological disorders and alcohol dependence. The primary outcome measure was to identify the number of assessments in which HTA bodies have considered adherence as a value message. **RESULTS:** A total of 405 evaluation assessments were submitted to HTA bodies for the above stated indications and timeframe. Out of these assessments, adherence was discussed in 65 (16.1%) of the assessments. However, adherence was not considered valuable for reimbursement decision making by HTA bodies in 19 of these 65 assessments. In the remaining 46 assessments, adherence was considered as a value message while making reimbursement decisions by the HTA bodies but it did not impact the final reimbursement decision in 79% of the instances. **CONCLUSIONS:** Leading HTA bodies have not considered medication adherence as a key metric in their reimbursement decision making.

HS3

HAD THE INDIVIDUAL MEDICAL BURDEN OF BASIC HEALTH INSURANCE PARTICIPANTS REALLY BEEN ALLEVIATED IN 2009-2012?

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OBJECTIVES: To analyze the out-of-pocket medical expenses of Basic Health Insurance participants between 2009 and 2012, and determine whether the individual medical burden has been alleviated really in the health care reform from 2009. **METHODS:** This study used the data from the National Sample Survey on Medical Service Utilization of Basic Medical Insurance participants in 2009-2012. This survey involved about 375 thousands in-patients with BMI from about 70 cities all over the country. All the actual claim data of medical expenses and medical care utilization from 2009 to 2012 were collected. Descriptive analysis was applied to the data and the related payment policies of BMI were reviewed. **RESULTS:** 1) The total medical expenses burden of the BMI in-patients is keeping a high speed growth between 2009 and 2012, increased from about US$33 billion to about US$64.5 billion (increased 25% per year). 2) The inpatient expenses presented a left skewed distribution. Over 55% of the expense burden came from 20% cases spending above US$3200. 3) The out-of-pocket rates of urban employee and residents were about 29% and 49% respectively, and both of them presented a U-type pattern. The inpatients spending below US$800 or above US$3200 had a higher burden. 4) The individual medical burden presented an increase tendency with the increase of the hospital level. **CONCLUSIONS:** Generally, health insurance eased the economic burden of inpatients and made out-of-pocket expense acceptable. But the individual burden for those inpatients with expenses above US$3200 had not been alleviated enough. New measures should be pursued to make further reduce, such as raising the reimbursement ceiling and providing new supplementary health insurance for severe illness. The increase speed of total medical burden should be controlled by lean formula management. The patients with commonly encountered illness should be guided to basic-level hospitals and supervision on medical service utilization should also be strengthened to control the irrational medical cost.

HS4

QUALITATIVE ASSESSMENT OF THE QUALITY OF PHARMACEUTICAL CARE SERVICES IN THE PROVINCE OF KHYBER PAKHTUNKHWA, PAKISTAN: HOSPITAL PHARMACISTS' VIEWS

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OBJECTIVES: To evaluate the perception of hospital pharmacists regarding quality of pharmaceutical care services in Khyber Pakhtunkhwa, Pakistan. **METHODS:** Qualitative assessment was implemented. A semi-structured interview guide was developed and face to face interviews were conducted. Hospital pharmacists was interviewed